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Delta InfraSuite Power System

Power Distribution Unit

User Manual

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About This Manual

This manual contains information about installing and operating the Delta PDU. Before installation and operation of this unit, please read below instructions carefully.



NOTE: This manual is applicable to the following models.

0U Model— PDU5113, PDU5213, PDU5315

1U Model— PDU7111, PDU7211, PDU7311, PDU7425

Save This Manual

This manual contains important instructions and warnings that you should follow during the installation, operation, storage and maintenance of this product. Failure to heed these instructions and warnings will void the warranty.

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1. Important Safety Instructions

Safety Precautions

To reduce the risk of personal injury from electric shock, the user must observe the following safety precautions when placing, installing, operating, or performing maintenance on this PDU.



WARNINGS!

- The PDU is designed for indoor use only. Install it in a well-controlled environment, away from excess moisture, temperature extremes, conductive contaminants, dust or direct sunlight.
- Do not connect the PDU to an ungrounded outlet or to extension cords or adapters that would eliminate the connection to ground. .
- Do not place or use the PDU in the presence of flammable substances.
- The power requirement for each piece of equipment connected to the PDU must not exceed the individual outlet's load rating.
- The total power requirement for all equipments connected to the PDU must not exceed the maximum load rating of the PDU.
- Do not drill into or attempt to open any part of the PDU housing. There are no user serviceable parts inside.
- Do not modify the PDU, including the input plugs and power cables.
- Do not use the PDU if any part of it becomes damaged.
- Do not mount the PDU to an insecure or unstable surface.
- Never install any electrical equipment during a thunderstorm.

Precautions for Rack Mounting

- Elevated Operating Ambient Temperature- If the PDU is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum rated ambient temperature specified by the manufacturer.

- Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- Mechanical Loading - Mounting of the equipment in a rack should be such that a hazardous condition does not occur due to uneven mechanical loading.
- Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over-current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. the use of power strips).

Precautions for Connecting the PDU to the AC Power Source

- Only a certified electrician can connect the PDU to the AC power source.
- Do not remove the cover. There are no internal components that the user can service.
- A certified electrician must install a circuit breaker before connecting the PDU to the AC power source. This protects the PDU against over-current.
- A certified electrician must determine the type of circuit breaker required depending on the input voltage.
- Before connecting the PDU to the AC power source, make sure they are well grounded.
- The use of a detachable input power cord is prohibited.
- The plug on the input power cord is intended to serve as the disconnect device. The outlet must be installed near the equipment and must be easily accessible.
- The short-circuit protective device is considered to be provided external to the equipment. A circuit breaker with adequate breaking (rupturing) capacity to interrupt the maximum fault current must be provided between the equipment and the building installation. Please see below external protective device for detail.

The suggested external short-circuit/ over-current protective device (circuit breaker):

--- Model No. PDU7111, PDU7211, PDU7311: 20A

--- Model No. PDU5113, PDU5213: 30A

--- Model No. PDU5315, PDU7425: 40A

Maintenance under Receiving Input Power

Delta strongly recommends that the user do not perform maintenance on the PDU when it is receiving the input power. However, if critical maintenance is required when the PDU is connecting to the input power, please strictly follow below precautions to reduce the risk of electric shock.

- Be a certified electrician
- Always work with other qualified electrician(s)
- Exactly know how to disconnect the electricity to the PDU in case of emergency
- Personal protection equipment is required
- Use insulated tools
- Strictly follow local and on-site regulations



2. PDU Overview

Delta PDU is able to distribute the power to the equipments mounted in the racks and enclosures used in the data centers, IT environment, and telecommunication rooms. Input to the PDU can be either single-phase or three-phase America, Taiwan or International voltage.

The PDU requires a user-supplied facility receptacle and circuit breaker for input connection and protection.

The output of the PDU supplies single-phase voltage. Use the power cords to connect the equipments with the receptacles on the PDU. The output receptacles are divided into 1, 2, or 3 equal groups. Each receptacle group is protected by a circuit breaker.

No.	Item	Quantity
1	PDU	1 pc
2	User Manual	1 pc
3	Bracket Ear	1 set



3. PDU Installation

0U Model PDU Installation

You can install the PDU into a rack using the attached toolless mounting pegs or mounting brackets. Once the PDU is installed in the rack, you can plug the power cords into the PDU's receptacles and secure the power cords in the PDU's retention slots using the provided cable ties.

➤ Toolless Mounting (Delta Standard Rack Cabinet)

You can mount the PDU without any tool into a Delta standard rack cabinet. The PDU can be vertically installed in the rear of the rack in the cable channel directly behind the rear vertical mounting rails. **See Figure 1.**

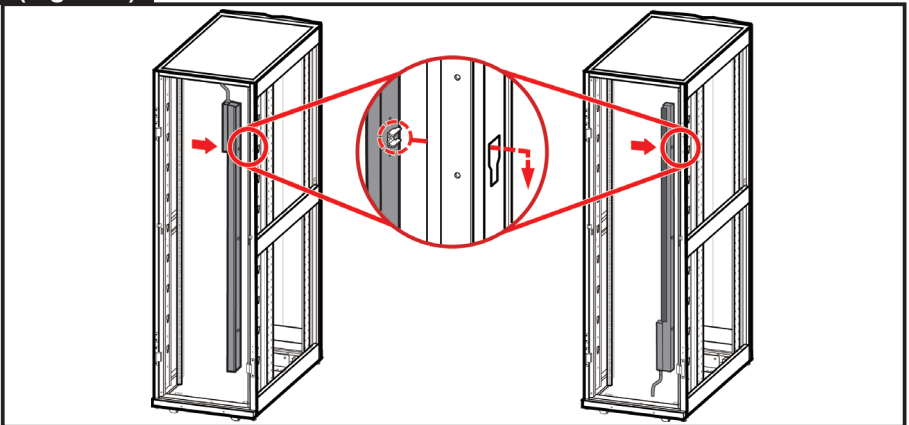
- 1) Locate the mounting holes in the cable channel behind the rear vertical mounting rails.
- 2) Hold the PDU vertically and align its toolless mounting pegs to the mounting holes.



NOTE: Either end of the PDU can face top or bottom.

- 3) Slide the mounting pegs into the mounting holes.
- 4) Push the PDU downward until it locks into position.

(Figure 1)



➤ Bracket Mounting (Non-Delta Rack Cabinet)

You can also use the mounting brackets to mount the PDU into any Non-Delta rack cabinet.

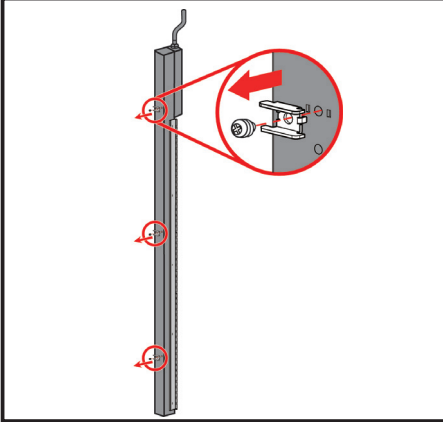
- 1) Choose the bracket mounting position for the PDU.
- 2) Please remove the toolless mounting pegs from the PDU. **See Figure 2.** Attach the mounting brackets to the PDU using the M4*8mm screws that came with the brackets. **See Figure 3.**



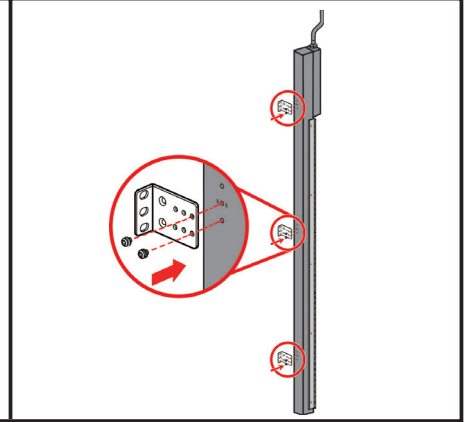
NOTE: Only use the supplied screws and nuts that came with the brackets.

- 3) Choose a location in the rack for the PDU.
- 4) Install the PDU on a mounting rail in your rack using the M6*12mm screws and M6 cage nuts. **See Figure 4.**

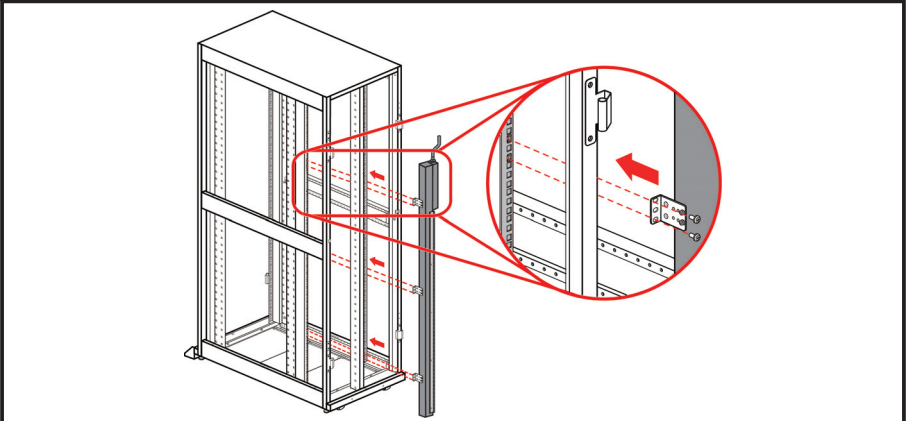
(Figure 2)



(Figure 3)



(Figure 4)

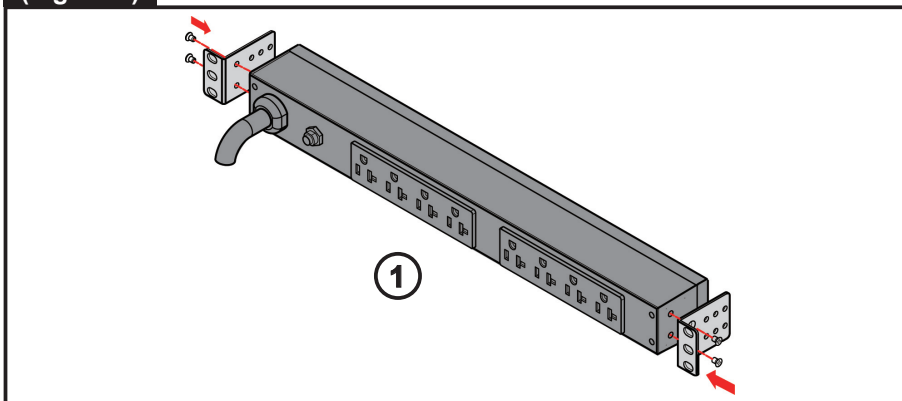


1U Model PDU Installation

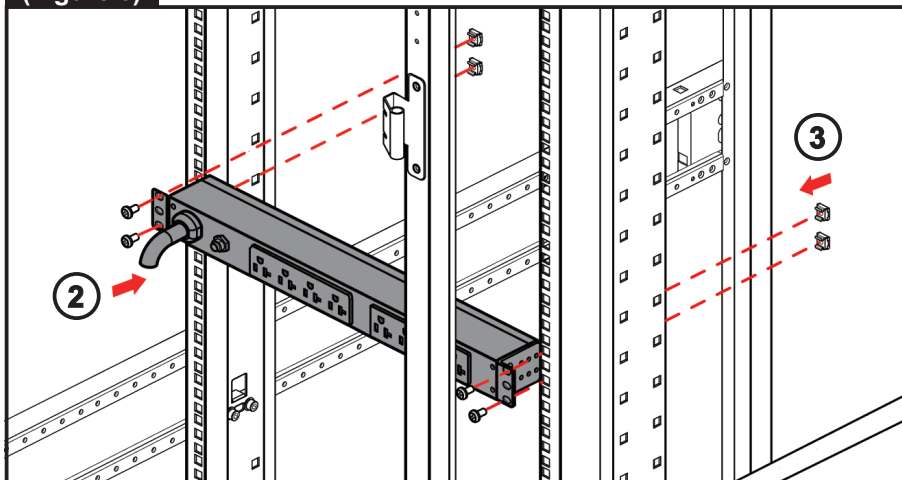
➤ Horizontal Mounting (for Model No. PDU7111, PDU7211, PDU7311)

- 1) Attach the mounting brackets to the PDU using the flat-head M4*6mm screws (provided). **See Figure 5.**
- 2) Choose a location in the rack for the PDU. The PDU will occupy one U-space. Install the PDU on a mounting rail in the rack using the M6*12mm screws and M6 cage nuts (provided). **See Figure 6.**

(Figure 5)



(Figure 6)



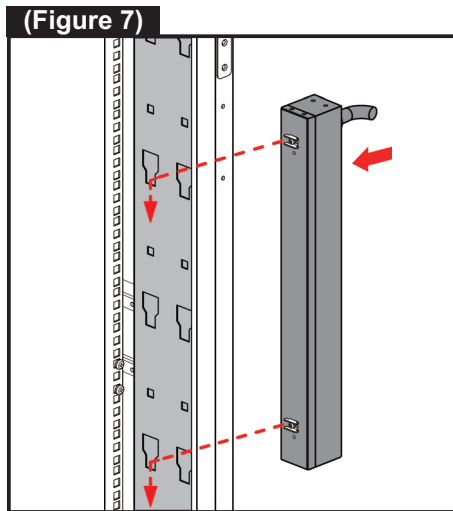
➤ **Vertical Mounting- Toolless Mounting (for Model No. PDU7111, PDU7211, PDU7311)**

You can mount the PDU without any tool into a Delta standard rack cabinet. The PDU can be vertically installed in the rear of the rack in the cable channel directly behind the rear vertical mounting rails. **See Figure 7.**



NOTE: The toolless mounting method is only applicable to Delta standard rack cabinet.

- 1) Hold the PDU vertically and align its toolless mounting pegs to the mounting holes.
- 2) Slide the mounting pegs into the mounting holes.
- 3) Push the PDU downward until it locks into position.

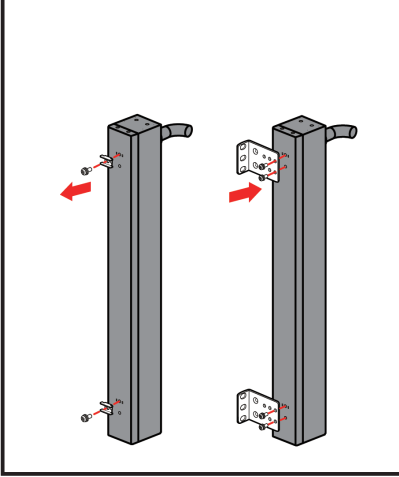


➤ **Vertical Mounting- Bracket Mounting (for Model No. PDU7111, PDU7211, PDU7311)**

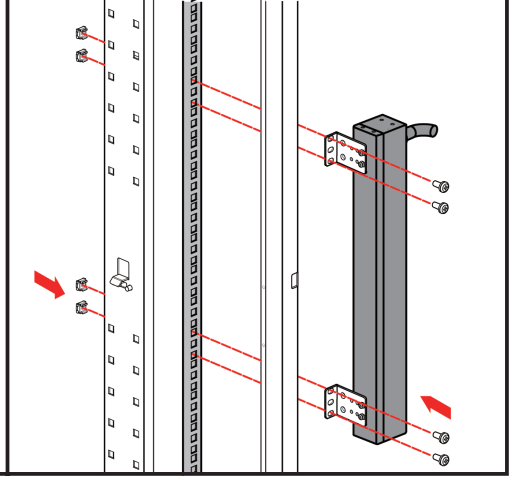
You can use the mounting brackets to mount the PDU vertically into Delta or any Non-Delta rack cabinet.

- 1) Please remove the toolless mounting pegs from the PDU. Attach the mounting brackets to the PDU using the M4*8mm screws (provided). **See Figure 8.**
- 2) Choose a location in the rack for the PDU.
- 3) Install the PDU on a mounting rail in the rack using the M6*12mm screws and M6 cage nuts (provided). **See Figure 9.**

(Figure 8)



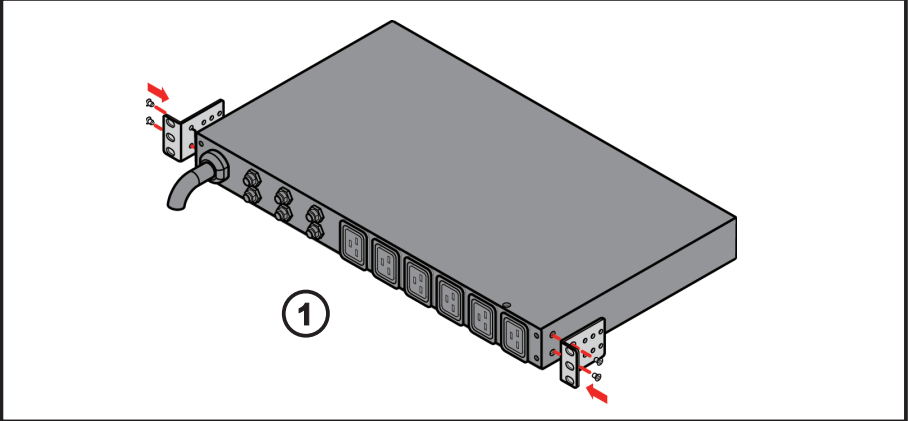
(Figure 9)



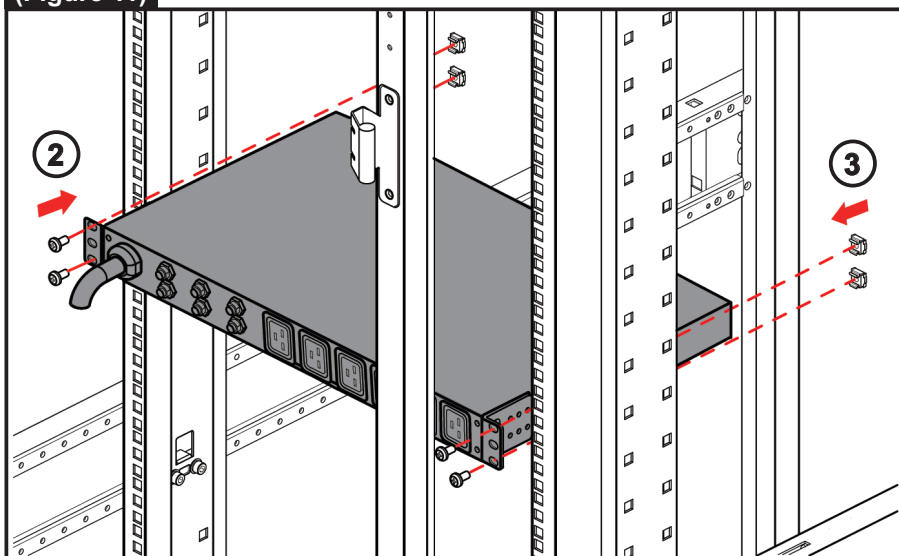
➤ Horizontal Mounting (for Model No. PDU7425)

- 1) Attach the mounting brackets to the PDU using the flat-head M4*6mm screws (provided). **See Figure 10.**
- 2) Choose a location in the rack for the PDU. The PDU will occupy one U-space. Install the PDU on a mounting rail in the rack using the M6*12mm screws and M6 cage nuts (provided). **See Figure 11.**

(Figure 10)



(Figure 11)





4. PDU Connection

Connect the PDU to a Grounded Outlet

Plug the PDU input power cord into a grounded outlet. Make sure the grounded outlet does not share a circuit with a heavy electrical load such as an air conditioner or refrigerator.

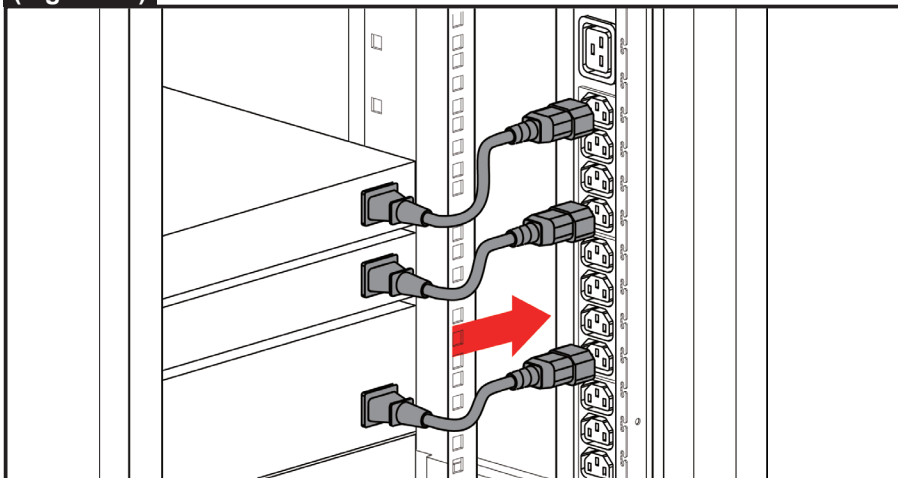
Connect the Power Cords to the PDU

- 1) Plug the power cords into the PDU's receptacles for both 0U & 1U models. *See Figure 12.*



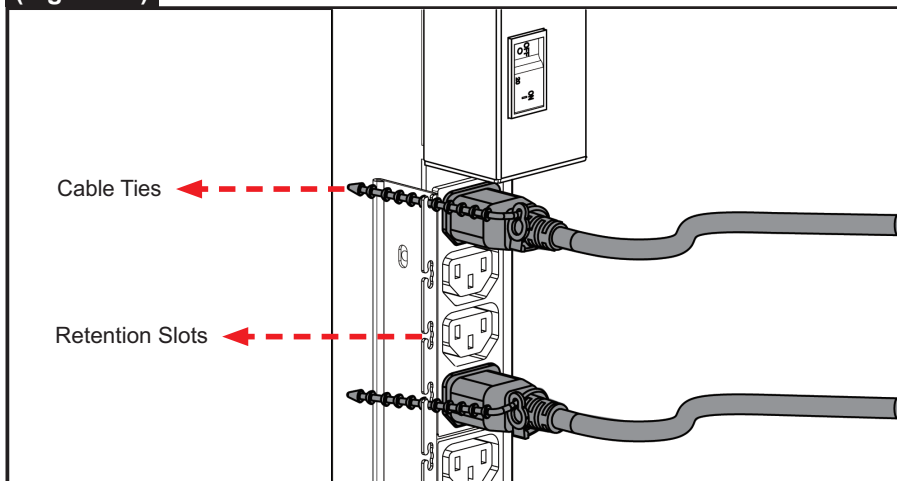
NOTE: *Figure 12* is the example of 0U model power cord connection.

(Figure 12)



- 2) Pull and fasten the cable ties into the PDU retention slots (only applicable to 0U model).
See Figure 13.

(Figure 13)



NOTE: This manual only provides the information on installation and operation of the PDU in normal circumstances. For any other information, please contact your local dealer or Delta customer service.



5. Specifications

➤ 0U Model:

Model No.	PDU5113	PDU5213	PDU5315
Input & Output			
Input Connector	NEMA L5-30P	NEMA L6-30P	IEC309-32A-3W
Output Connector	(24) NEMA 5-15/20R	(24) IEC320-C13	(24) IEC320-C13 (4) IEC320-C19
Input Rated Current	24A	24A	32A
Nominal Input Voltage	100-120VAC (Single Phase)	200-240VAC (Single Phase)	200-240VAC (Single Phase)
Input Frequency	50/60Hz	50/60Hz	50/60Hz
Output Voltage	100-120VAC (Single Phase)	200-240VAC (Single Phase)	200-240VAC (Single Phase)
Dimensions & Weight			
Dimensions (W * H * D)	48*1250*50/90mm	48*1250*50/90mm	48*1250*50/90mm
Unit Weight	4.88kg	4.92kg	4.90kg
Environment			
Temperature	Operating: 0°C to 45°C Storage: -20°C to 65°C		
Altitude	Operating: 0 to 6,600 feet (0 to 2000 meters) Non-operating: 0 to 49,000 feet (0 to 15,000 meters)		
Humidity	Operating: 5 to 95% relative humidity (non-condensing) Non-operating: 5 to 95% relative humidity (non-condensing)		



NOTE: All specifications are subject to change without prior notice.

➤ 1U Model:

Model No.	PDU7111	PDU7211	PDU7311	PDU7425
Input & Output				
Input Connector	NEMA L5-20P	NEMA L6-20P	IEC309-16A-3W	IEC309-32A-5W
Output Connector	(8) NEMA 5-15/20R	(12) IEC320-C13	(12) IEC320-C13	(6) IEC320-C19
Input Rated Current	16A	16A	16A	32A
Nominal Input Voltage	100-120VAC (Single Phase)	200-240VAC (Single Phase)	200-240VAC (Single Phase)	346-415VAC (Three Phase, Y)
Input Frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Output Voltage	100-120VAC (Single Phase)	200-240VAC (Single Phase)	200-240VAC (Single Phase)	200-240VAC (Single Phase)
Dimensions & Weight				
Dimensions (W * H * D)	440*44*55mm	440*44*55mm	440*44*55mm	440*44*250mm
Unit Weight	1.56kg	1.64kg	1.48kg	4.8kg
Environment				
Temperature	Operating: 0°C to 45°C Storage: -20°C to 65°C			
Altitude	Operating: 0 to 6,600 feet (0 to 2000 meters) Non-operating: 0 to 49,000 feet (0 to 15,000 meters)			
Humidity	Operating: 5 to 95% relative humidity (non-condensing) Non-operating: 5 to 95% relative humidity (non-condensing)			



NOTE: All specifications are subject to change without prior notice.



6. Warranty

Seller warrants this product, if used in accordance with all applicable instructions, to be free from original defects in material and workmanship within the warranty period. If the product has any failure problem within the warranty period, Seller will repair or replace the product at its sole discretion according to the failure situation.

This warranty does not apply to normal wear or to damage resulting from improper installation, operation, usage, maintenance or irresistible force (i.e. war, fire, natural disaster, etc.), and this warranty also expressly excludes all incidental and consequential damages.

Maintenance service for a fee is provided for any damage out of the warranty period. If any maintenance is required, please directly contact the supplier or Seller.



WARNINGS!

The individual user should take care to determine prior to use whether the environment and the load characteristic are suitable, adequate or safe for the installation and the usage of this product. The User Manual must be carefully followed. Seller makes no representation or warranty as to the suitability or fitness of this product for any specific application.

